UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,128	02/27/2002	Marc Bavant	126099	3367

52531 7590 12/28/2007

CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 FIFTH AVENUE
SUITE 2800
SEATTLE, WA 98101-2347

EXAMINER	
AHMED, SALMAN	

ART UNIT	PAPER NUMBER
2619	

MAIL DATE	DELIVERY MODE
12/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/083,128	BAVANT ET AL.	
	Examiner	Art Unit	
	Salman Ahmed	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2 and 4-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *5/30/2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1, 2 and 4-17 are pending.

Claim 3 has been cancelled by the Applicant.

Claims 1, 2 and 4-17 are rejected.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regards to claim 11, line 2, Applicant claims "at least one low-bit-rate artery" which Examiner interprets as there maybe more than one low-bit-rate artery. However, in line 9 of the said claim, Applicant states the limitation "the one low-bit-rate artery" which indicates definitely, that there is only one low-bit-rate artery in contradiction to line 2. As such claim 11 is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regards to claim 15, line 2, Applicant claims "one or more low-bit-rate arteries" which Examiner interprets as there maybe more than one low-bit-rate artery. However, in line 9 of the said claim, Applicant states the limitation "the one low-bit-rate artery" which indicates definitely, that there is only one low-bit-rate artery which is in contradiction to earlier line 2 statement. As such claim 15 is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 11 and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Cai et al. (US PAT 6134246, hereinafter Cai).

In regards to claim 11, Cai anticipates a device (Figures 4, 5 and 6, ATM switch 20) for data transmission between at least two users (users connected to links 30 and 60, in figures 4 and 5) in a communications network (Figures 4, 5 and 6, ATM network) comprising at least one low-bit-rate artery (Figures 4 and 5, any one of links 40) and one or more standard-bit-rate arteries (Figures 4 and 5, links 30 and 60), the-network comprising a basic transmission unit (ATM cell), and supporting at least one adaptation layer protocol (column 5 line 53, AAL5), wherein the device comprises at least one multiplexer device (Figures 4, 5 and 6, ATM switch 20) having a packetization (ATM or AAL5 packetizaiton) function and a switching function (Figures 4, 5 and 6, ATM switch 20), wherein the switching function of the multiplexer device is adapted to the switching of packets conveyed in the basic transmission units according to the adaptation layer protocol among several virtual lines (column 6 line 59, T1 virtual connections (VCs))

constituted by connections in multiplexed or non-multiplexed mode (column 5 lines 46-67, ATM cells are received by the first ATM switch, such as Samsung STARacer ATM switch, over an OC-3 communication link 30. A routing table (RT) 300 then forwards the received ATM cells to a first Segmentation and Re-assembly (SAR) module or chip 310. A first application module 330 associated with the SAR module 310 then assembles the cells into an AAL5 packet and performs a CRC32 check. If the assemble packet is a "good" packet, the SAR module 310 then interrupts an associated central processing unit (CPU) 320 and places the assembled AAL5 packet into a first designated memory location 340. The CPU 320 then adds a sequence number to the placed Protocol Data User (PDU) or AAL5 packet and selects a T1 communication link 40 to communicate the packet. While selecting an outgoing communication link, the CPU selects a T1 link with the lowest traffic load using a load-balancing algorithm. The PDU or AAL5 packet with the sequence number stored therein is then communicated back down to the SAR module 310. The SAR module 310 de-assembles the user packet into a number of ATM cells and communicates all of the de-assembled ATM cells associated with the particular user packet over the selected T-1 communication link 40), and where the data on the one or more standard-bit-rate arteries (Figures 4 and 5, links 30 and 60) are multiplexed onto the one low-bit-rate artery (Figures 4 and 5, any one of T1 link 40).

In regards to claims 15 and 16 Cai anticipates a network (Figures 4, 5 and 6, ATM network) to convey data in a connection between at least two users (users connected to links 30 and 60, in figures 4 and 5), the network comprising one or more

low-bit-rate artery (Figures 4 and 5, any one of links 40) and one or more standard-bit-rate arteries (Figures 4 and 5, links 30 and 60), at least one adaptation layer protocol (column 5 line 53, AAL5) and one basic transmission unit (ATM cell), wherein tile network comprises at least one device (Figures 4, 5 and 6, ATM switch 20) comprising at least one multiplexer device (Figures 4, 5 and 6, ATM switch 20) having a packetization function (ATM or AAL5 packetizaiton) and a switching function, (Figures 4, 5 and 6, ATM switch 20) wherein the switching function of the multiplexer device is adapted to the switching of packets conveyed in the basic transmission units according to the adaptation layer protocol among several virtual lines (column 6 line 59, T1 virtual connections (VCs)) constituted by connections in multiplexed or non-multiplexed mode, this device being positioned upstream to and downstream from a low-bit-rate artery (column 5 lines 46-67, ATM cells are received by the first ATM switch, such as Samsung STARacer ATM switch, over an OC-3 communication link 30. A routing table (RT) 300 then forwards the received ATM cells to a first Segmentation and Re-assembly (SAR) module or chip 310. A first application module 330 associated with the SAR module 310 then assembles the cells into an AAL5 packet and performs a CRC32 check. If the assemble packet is a "good" packet, the SAR module 310 then interrupts an associated central processing unit (CPU) 320 and places the assembled AAL5 packet into a first designated memory location 340. The CPU 320 then adds a sequence number to the placed Protocol Data User (PDU) or AAL5 packet and selects a T1 communication link 40 to communicate the packet. While selecting an outgoing communication link, the CPU selects a T1 link with the lowest traffic load using a load-

balancing algorithm. The PDU or AAL5 packet with the sequence number stored therein is then communicated back down to the SAR module 310. The SAR module 310 de-assembles the user packet into a number of ATM cells and communicates all of the de-assembled ATM cells associated with the particular user packet over the selected T-1 communication link 40. In Figures 4 and 5, switches 20 and 50 are upstream to and downstream from link 40) and where the data on the one or more standard-bit-rate arteries (Figures 4 and 5, links 30 and 60) are multiplexed onto the one low-bit-rate artery (Figures 4 and 5, any one of T1 link 40).

In regards to claim 17, Cai anticipates network comprises at least two devices (Figure 3, ATM switches 20 and 50), with a first device positioned at a first end of a artery and a second device positioned at a second end of the artery (Figure 3, two ends of T-1 communication links), wherein, in multiplexed mode, the first device is adapted to use the packetization function to extract multiple packets from basic transmission units received from different originating users (column 5 lines 25-29, ATM cells received over an incoming high bandwidth communication link 30, such as a OC-3); multiplex packets in a basic transmission unit of a virtual circuit set up between tile first end and the second end of the artery; and send the basic transmission unit of the virtual circuit from the first end to the second end of the low-bit-rate artery (column 5 lines 53-56 and columns 5-6 lines 40-2, If the assemble packet is a "good" packet, the SAR module 310 then interrupts an associated central processing unit (CPU) 320 and places the assembled AAL5 packet into a first designated memory location 340. The PDU or AAL5 packet with the sequence number stored therein is then communicated back down to

the SAR module 310. The SAR module 310 de-assembles the user packet into a number of ATM cells and communicates all of the de-assembled ATM cells associated with the particular user packet over the selected T-1 communication link 40); and wherein, in multiplexed mode, the second device is adapted to: receive the basic transmission unit of the virtual circuit; use the packetization function to extract the packets from unit by demultiplexing the packets from unit (column 6 lines 7-11, A second application module 370 associated with the second SAR module 360 then reassembles the received ATM cells into a PDU or AAL5 packet and places it in a designated memory location 380); determine the connection to which each of the packets belong; insert each packet into a new basic transmission unit at a rate of one packet per unit for transmission to an addressee user; and send said new basic transmission unit to the addressee user (column 6 lines 10-20, A CPU 330 associated with the second ATM switch 50 re-sequences the received AAL5 or PDU packet with other packets received over other T-1 communication links and transmits them back down to the second SAR module 360. The second SAR module 360 then de-assembles the AAL5 packets into a number of ATM cells and utilize a routing table 390 to transmit the cells over an outgoing OC-3 communication link 60 in a conventional manner).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 2, 4-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cai et al. (US PAT 6134246, hereinafter Cai) in view of Morikawa et al. (US PAT 6061354, hereinafter Morikawa) and Agarwal (US PAT 6963570).

In regards to claim 1, Cai teaches a method for conveying data between at least two users (users connected to links 30 and 60, in figures 4 and 5) having a connection in a communications network (Figures 4, 5 and 6, ATM network) comprising at least one low-bit-rate artery (Figures 4 and 5, any one of links 40) and one or more standard-bit-rate arteries (Figures 4 and 5, links 30 and 60), a basic transmission unit (Figures 4, 5 and 6, transmitter 220), at least two adaptation units (Figure 5, elements 310 and 320), and at least one adaptation layer protocol (column 5 line 53, AAL5), the data to be transmitted taking the form of packets (ATM cells), the method comprising upstream from the artery at an adaptation unit assigned to an originating user, collecting data from the originating user (column 5 lines 25-29, ATM cells received over an incoming high

bandwidth communication link 30, such as a OC-3); forming a AAL packet comprising the packet of application data (AAL5 packet); inserting the AAL packet (AAL5 packet) into a basic transmission unit (AAL5 packet) at a rate of one packet per unit and sending unit through a network to a first end of the artery (column 5 lines 53-56, If the assemble packet is a "good" packet, the SAR module 310 then interrupts an associated central processing unit (CPU) 320 and places the assembled AAL5 packet into a first designated memory location 340); at the first end of the artery, extracting multiple AAL packets from basic transmission units (AAL5 packets) received from different originating users and multiplexing packets in a basic transmission unit of a virtual circuit set up between the first end and a second end of the artery according to the adaptation layer protocol; sending the basic transmission unit of the virtual circuit from the first end to the second end of the artery (columns 5-6 lines 40-2, The PDU or AAL5 packet with the sequence number stored therein is then communicated back down to the SAR module 310. The SAR module 310 de-assembles the user packet into a number of ATM cells and communicates all of the de-assembled ATM cells associated with the particular user packet over the selected T-1 communication link 40); at the second end of the artery, receiving the basic transmission unit of the virtual circuit and extracting the AAL packets from unit by demultiplexing the packets from unit; determining the connection to which each of the AAL packets belong and inserting each AAL packet into a basic transmission unit at a rate of one packet per unit for transmission to an addressee user (column 6 lines 7-11, A second application module 370 associated with the second SAR module 360 then reassembles the received ATM cells into a PDU or AAL5 packet and

places it in a designated memory location 380); sending basic transmission unit through a network downstream from the artery to an adaptation unit assigned to the addressee user; and at the adaptation unit assigned to the addressee user, extracting the AAL from the basic transmission unit (column 6 lines 10-20, A CPU 330 associated with the second ATM switch 50 re-sequences the received AAL5 or PDU packet with other packets received over other T-1 communication links and transmits them back down to the second SAR module 360. The second SAR module 360 then de-assembles the AAL5 packets into a number of ATM cells and utilize a routing table 390 to transmit the cells over an outgoing OC-3 communication link 60 in a conventional manner).

In regards to claim 1, Cai do not explicitly teach packets having a size smaller than the size of the basic transmission unit and multiplexing packets of different originating users.

Morikawa in the same field of endeavor teaches (column 1, lines 19-21 and 37-41) methods for loading a standard ATM cell with multiplexed connections in the form of micro-frames including data shorter than the standard ATM cell. Provide a concrete configuration of a high speed multiplexed transmitter for loading standard ATM cells with a plurality of connections in the form of micro-frames including data shorter than the standard ATM cell.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai and Counterman's system/method by incorporating the steps of packetizing packets having a size smaller than the size of the basic transmission unit and multiplexing packets of different originating users as suggested by

Morikawa. The motivation is that (as suggested by Morikawa, column 14 lines 32-45) the multiplex transmitters can achieve efficient multiplex transmission processing. In addition, it is possible to implement the processing with a minimum delay, and to achieve the multiplexing of micro-frames with different service qualities onto one ATM cell. Moreover, it is possible to improve the channel efficiency and to achieve finer transmission control for maintaining the quality by handling the standard ATM cells and the ATM cells loaded with the micro-frames in the same manner.

In regards to claim 1, Cai and Morikawa do not explicitly teach converting data into coded frames using a compression algorithm.

Agarwal in the same field of endeavor teaches converting data into coded frames using a compression algorithm (columns 6-7 lines 54-11, The present invention specifically concerns an ALA Header Compression Algorithm (ALA-AHCA) that permits 4 octets of a standard 5-octet ATM cell header to be compressed to 2 octets before transmission over a link).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai and Morikawa's system/method by incorporating the steps of converting data into coded frames using a compression algorithm as suggested by Agarwal. The motivation is that (as suggested by Agarwal, columns 6-7 lines 54-11) data compression can increase bandwidth of a link making the network more bandwidth efficient.

In regards to claim 1, Cai, Morikwaa and Agarwal do not explicitly teach the AAL packet that is payload to ATM cell is Common Part Sublayer PDU (CPS-PDU).

Kim in the same field of endeavor teaches the AAL packet that is payload to ATM cell is Common Part Sublayer PDU (CPS-PDU) (See figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai, Morikwaa and Agarwal's system/method by incorporating the teachings of AAL packet that is payload to ATM cell is Common Part Sublayer PDU (CPS-PDU). The motivation is that (as suggested by Kim, columns 1-2, lines 60-2), such format is based on recommendation I.363.2 and I.363.5 of Telecommunication Standardization Sector of ITU (ITU-T) provided in International Telecommunication Union and it is advantageous to adapt to known standards for implementation of ATM-AAL based communication for following reason: Companies actively involved in adhering to standards more frequently reap short- and long-term cost-savings and competitive benefits than those that do not. Standardization can lead to lower transaction costs in the economy as a whole, as well as to savings for individual businesses. Standards have a positive effect on the buying power of companies. Standards can help businesses avoid dependence on a single supplier because the availability of standards opens up the market. The result is a broader choice for businesses and increased competition among suppliers. Companies also have increased confidence in the quality and reliability of suppliers who use standards. In addition, standards are used by businesses to exert market pressure on companies further down the value chain, i.e., their clients. Thus, businesses can use standards to broaden their potential markets.

In regards to claim 2, Cai teaches multiplexing of data in AAL packets from the same originating user upstream to the low-bit-rate artery and demultiplexing AAL packets downstream from the low-bit-rate artery as described in the rejections of claim 1 above.

Cai does not explicitly teach the AAL packet that is payload to ATM cell is Common Part Sublayer PDU (CPS-PDU).

Kim in the same field of endeavor teaches the AAL packet that is payload to ATM cell is Common Part Sublayer PDU (CPS-PDU) (See figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai, Morikwaa and Agarwal's system/method by incorporating the teachings of AAL packet that is payload to ATM cell is Common Part Sublayer PDU (CPS-PDU). The motivation is that (as suggested by Kim, columns 1-2, lines 60-2), such format is based on recommendation I.363.2 and I.363.5 of Telecommunication Standardization Sector of ITU (ITU-T) provided in International Telecommunication Union and it is advantageous to adapt to known standards for implementation of ATM-AAL based communication for following reason: Companies actively involved in adhering to standards more frequently reap short- and long-term cost-savings and competitive benefits than those that do not. Standardization can lead to lower transaction costs in the economy as a whole, as well as to savings for individual businesses. Standards have a positive effect on the buying power of companies. Standards can help businesses avoid dependence on a single supplier because the availability of standards opens up the market. The result is a broader

choice for businesses and increased competition among suppliers. Companies also have increased confidence in the quality and reliability of suppliers who use standards. In addition, standards are used by businesses to exert market pressure on companies further down the value chain, i.e., their clients. Thus, businesses can use standards to broaden their potential markets.

In regards to claim 4, Cai, Morikawa and Agarwal do not explicitly teach using AAL2 protocol.

Kim in the same field of endeavor teaches using AAL2 protocol.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai, Morikawa and Agarwal's system/method by incorporating the steps of using AAL2 protocol as suggested by Kim. The motivation is that, AAL2 protocol is for efficient when transmitting voice related data and it would be obvious to choose a standard protocol, which suits the network requirement, the best.

In regards to claim 5, Cai teaches the Common Part Sublayer packet (AAL5) is formed of the Application data packet and a header (Cai: columns 5-6 lines 40-20).

Cai does not explicitly teach the packet of application data is formed of a fixed number of successive coded frames.

Agarwal in the same field of endeavor teaches the packet of application data is formed of a fixed number of successive coded frames (Agarwal: columns 6-7 lines 54-11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai's system/method by incorporating the steps of using

application data being formed of a fixed number of successive coded frames as suggested by Agarwal. The motivation is that fixed number of successive coded frames requires less complex processing steps as opposed to variable number of successive coded frames; thus streamlining the data packet processing procedure.

In regards to claim 6, Cai, Morikawa, Agarwal and Kim do not explicitly teach using AAL1 protocol.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai, Morikawa, Agarwal and Kim's system/method by incorporating the steps of using AAL1 protocol. The motivation is that, AAL1 protocol is for efficient when transmitting fixed data and it would be obvious to choose a standard protocol, which suits the network requirement, the best.

In regards to claim 7 Cai teach downstream from the low-bit-rate artery, if the downstream end of the artery corresponds to the upstream end of an additional low-bit-rate artery (Figure 5 and 6, links 40), repeating the actions of multiplexing the Common Part Sublayer packets from different originating users in a basic transmission unit of a virtual circuit set up between the first end and second end of the additional low-bit-rate artery, and sending the basic transmission unit of the virtual circuit from the first end to the second end of the additional low-bit-rate artery (Cai: columns 5-6 lines 40-20).

In regards to claim 8, Cai teaches at the level of addressee user extracting the coded frames from AAL packet and recreating the data for addressee user (Cai: columns 5-6 lines 40-20).

Cai, Morikwaa and Agarwal do not explicitly teach the AAL packet that is payload to ATM cell is Common Part Sublayer PDU (CPS-PDU).

Kim in the same field of endeavor teaches the AAL packet that is payload to ATM cell is Common Part Sublayer PDU (CPS-PDU) (See figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai, Morikwaa and Agarwal's system/method by incorporating the teachings of AAL packet that is payload to ATM cell is Common Part Sublayer PDU (CPS-PDU). The motivation is that (as suggested by Kim, columns 1-2, lines 60-2), such format is based on recommendation I.363.2 and I.363.5 of Telecommunication Standardization Sector of ITU (ITU-T) provided in International Telecommunication Union and it is advantageous to adapt to known standards for implementation of ATM-AAL based communication for following reason: Companies actively involved in adhering to standards more frequently reap short- and long-term cost-savings and competitive benefits than those that do not. Standardization can lead to lower transaction costs in the economy as a whole, as well as to savings for individual businesses. Standards have a positive effect on the buying power of companies. Standards can help businesses avoid dependence on a single supplier because the availability of standards opens up the market. The result is a broader choice for businesses and increased competition among suppliers. Companies also have increased confidence in the quality and reliability of suppliers who use standards. In addition, standards are used by businesses to exert market pressure on companies

further down the value chain, i.e., their clients. Thus, businesses can use standards to broaden their potential markets.

In regards to claim 10, Cai teaches transporting digital voice (column 1 line 48).

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cai, Morikawa, Agarwal and Kim as applied to claim 1 above, and further in view of Stacey et al. (US PAT 6590909, hereinafter Stacey).

Cai, Morikawa, Agarwal and Kim teach multiplexing technique as described in the rejections of claim 1 above.

Cai, Morikawa, Agarwal and Kim do not each the use of a UUI field to provide error checking.

Stacey in the same field of endeavor teaches error checking using UUI (See fig 6).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided Cai, Morikawa, Agarwal and Kim's system/method with error checking via the use of UUI in light of the teachings of Stacey in order to provide for a secure channel.

5. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cai et al. (US PAT 6134246, hereinafter Cai) in view of Beshai et al.(US PAT 6339488, hereinafter Beshai).

In regards to claim 12, Cai teaches a table (Figure 5, RT 300) adapted for determining the artery over which the packets in the basic transmission units are intended to travel (Figure 5 and columns 5-6, lines 40-2), transmitting a basic transmission unit (AAL5) to the multiplexer wherein the packetization funciton is configured to extract the packets from the basic transmission units intended to travel through a low-bit-rate artery and for packetization of the packets in new basic transmission units in multiplexed mode for each virtual low-bit-rate artery as described in the rejections of claim 11 above.

Cai does not explicitly teach a shuffler to carry out a transparent switching of the units that do not have to travel through a low-bit-rate artery.

Beshai in the same field of endeavor teaches a shuffler (An optical shuffler or ADM) to carry out a transparent switching of the units that do not have to travel through a low-bit-rate artery (columns 5-6 lines 47-20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai's system/method by incorporating the steps of teach a shuffler to carry out a transparent switching of the units that do not have to travel through a low-bit-rate artery as suggested by Beshai. The motivation is that (as suggested by Beshai, columns 5-6 lines 47-20) shuffler enables a switch to properly direct traffic to correct destination based on traffic parameters and all the traffic control of the channel is performed by these shufflers, including rate control, QOS (quality-of-service) control, etc. as the established paths are rate-regulated, in establishing reliable individual connections within a path.

In regards to claim 13, Cai and Beshai do not explicitly teach using AAL2 protocol.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai and Beshai's system/method by incorporating the steps of using AAL2 protocol. The motivation is that, AAL2 protocol is for efficient when transmitting voice related data and it would be obvious to choose a standard protocol, which suits the network requirement, the best.

In regards to claim 14, Cai teaches device is an ATM switch equipped with a multiplexer whose role is configured to switch Common Part Sublayer packets among several virtual arteries constituted by ATM connections in multiplexed or non-multiplexed (Cai: columns 5-6 lines 40-20).

In regards to claim 14 Cai and Beshai do not explicitly teach using AAL2 protocol.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai and Beshai's system/method by incorporating the steps of using AAL2 protocol. The motivation is that, AAL2 protocol is for efficient when transmitting voice related data and it would be obvious to choose a standard protocol, which suits the network requirement, the best.

Response to Arguments

6. Applicant's arguments, see pages 7-12 of the Remarks section, filed 10/30/2007, have been fully considered. Examiner has presented a new ground of rejection

presented in this office action. As such, any further response to Applicant's argument is moot.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571) 272-8307. The examiner can normally be reached on 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SA
Salman Ahmed
Examiner
Art Unit 2619
12/20/2007

EDAN . ORGAD
SUPERVISORY PATENT EXAMINER